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ABSTRACT

The yearly screening process to detect scoliosis (curvature of the spine) and poor posture in girls 10 to 14 and boys 13 to 14 is discussed. The purpose of the program is to detect deformities in their earliest stages to prevent progression. Photographs are interspersed with text on suggestions for planning the screening program, clothing, setting up the program, conducting the actual screening, and rescreening and followup. The involvement of the Bureau for Crippled Children is considered. Sample forms and letters are appended along with listings of references on scoliosis screening. (CL)

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Revised Edition

SLOW DANGEROUS CURVE

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EC 123 218

Wisconsin Department of Public Instruction
Barbara Thompson, Ph.D., State Superintendent

SLOW DANGEROUS CURVE

Scoliosis and Posture Screening Handbook

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Bulletin No.

Revised 6-79

Please note that the Bureau for Crippled Children is now known as the Bureau for Children with Physical Needs (BCPN).

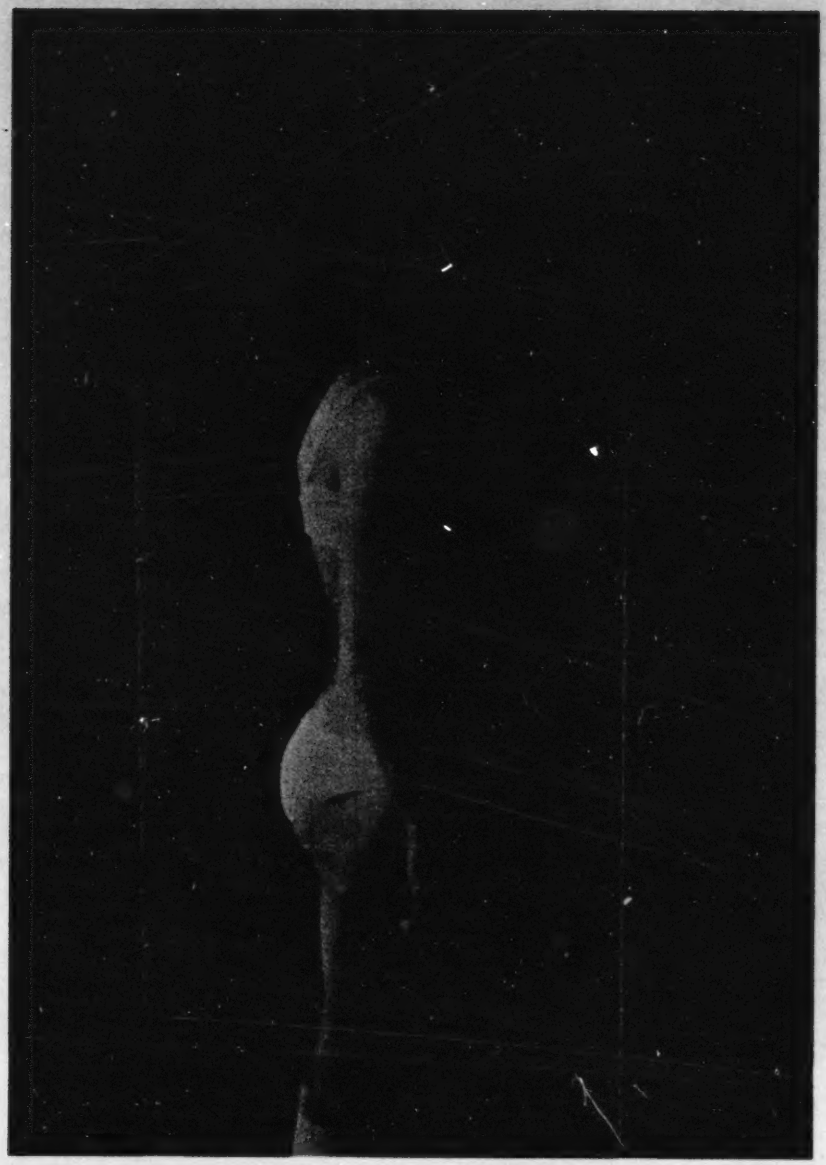
FOREWORD

Interest in mass screening procedures to detect scoliosis (curvature of the spine) and evidence of poor posture in children has been recently expressed by nurses, physical therapists, physical education instructors, and physicians. The Department of Public Instruction has worked with several school systems to develop techniques that would be applicable to any school system with only slight modification.

The ultimate goal of the program is to examine all girls between the ages of 10-14 (grades 5-9) and boys between the ages of 13-14 (grades 8-9) every year for any evidence of spinal deviation; namely, scoliosis or kyphosis.

In other states where this program has been conducted, four percent of the students screened have been found to have a spinal variation and two percent have required active treatment or ongoing observation. The purpose of the screening program is to recognize deformities in their earliest stages so that progression can be prevented.

The screening process should be designed so that a person with a minimum of training can rapidly look at a large number of children and decide whether they have or do not have certain characteristics that might indicate an abnormality. This is not to be confused with a diagnosis; it is only to separate those children who might have the abnormal characteristic. At this stage, the number of children usually designated will be excessive, but hopefully none will be missed. At the second level of screening (rescreening), the nurse, physical therapist (P.T.), or someone with knowledge of the condition will look at the group and decide on the proper referral procedure. They will distinguish between those children who are suspicious enough to refer to the physician, children who might be seen in a few months by the nurse, and those who are perfectly normal.



Example of poor posture observed in screening program.

SUGGESTIONS FOR SCREENING PROGRAM

Although the screening process can be planned in a number of ways, it would seem most desirable to involve a team including some or all of the following: physicians, nurses, physical education teachers, physical therapists, parents, and representatives of the student body. Aides and volunteers with some type of medical background may be very helpful in assisting with the screening process.

All students who are to be screened should be informed about the reasons for the program. Preferably this should be done in health or physical education classes. A film and slides are available upon request from our department for this purpose.

Since it is likely that individuals with varying backgrounds (nurses, physical education teachers, aides, volunteers) will participate in the screening process, posture deviations have been shown on the chart (page 21) in the very general outline and technical names have been omitted.

Those doing the screening should not be concerned with exact matching of pictures with students since combinations of deviations are fairly common. The pictured conditions are intended only for convenient approximation of conditions.

The screening form is designed to accumulate information from regular annual screenings on children from fifth through ninth grade.

For best results, routine information (age, school, etc.) should be recorded on the screening form prior to the day of screening. The forms may be arranged in the order in which the students will be examined. It may be advantageous to collect this information in a physical education or health education class.

When plans are being made for screening, it is desirable to set up a sequence of procedures which are appropriate for screening fairly large groups of students in a relatively short time. Before the scheduled screening day, one group of students should be run through the sequences to discover any unanticipated difficulties.

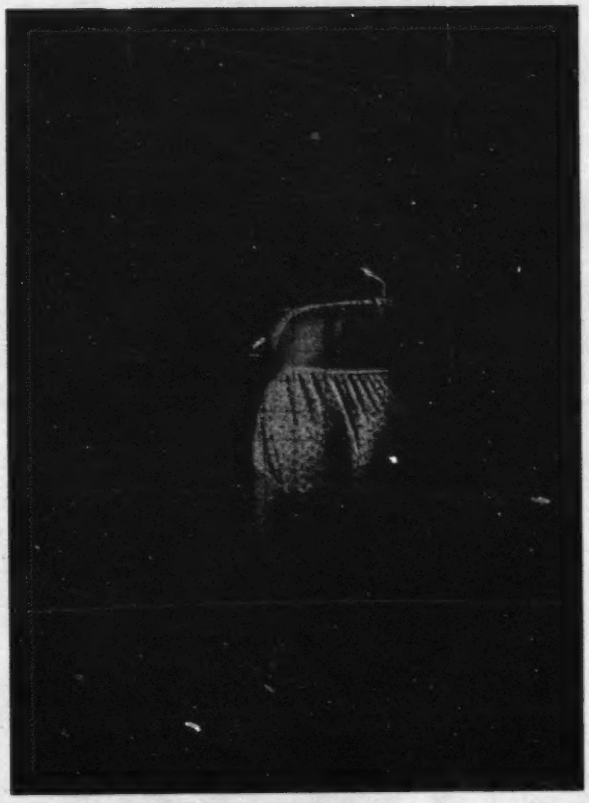
The screening is best accomplished by having the children stand behind a simple grid while the observer sits or stands at an appropriate distance. A plain background and contrasting color of string in the grid is recommended. A dark background with white strings shows up well and is especially valuable when observing for a rib hump in the forward bending or Adams position. Side lighting may also be helpful in seeing minor amounts of spinal curvature but sometimes the benefits are not worth the extra effort.

Details of the construction of one model of screening grid are given on page 20.

CLOTHING

Postural deviations are most readily observable when children are wearing very little clothing. It is especially important that the observer is able to get a relatively uninterrupted view of the child's back in order to detect any deviation from the vertical.

In almost any setting, boys may be screened while stripped to the waist and wearing gym shorts. Girls may be dressed in two-piece bathing suits (bikinis) or in bra and panties, depending on the situation. Leotards or one-piece bathing suits usually cover up the lower lumbar area and are therefore not appropriate. Also note that subjects should not wear shoes during the screening process.



Eleven-year-old girl with definite curvature noted during screening. Note right shoulder lower than left and right arm hangs nearer waist than left. In forward bending (Adams position), rib hump is present in the right thoracic region and a compensating fullness in the left lumbar area can be detected. X-rays reveal a right thoracic curvature severe enough to justify Milwaukee Brace.

STEPS INVOLVED IN SETTING UP SCOLIOSIS PROGRAM

1. Assemble a committee to plan the program:
   a. school administrator
   b. building principal
   c. school and city/county nurses
   d. physical education teacher
   e. physician - representative from county medical society and orthopedist if there is one in the community.
   f. P.T.A. representative
   g. local physical therapist - if available
   h. student council representative.

2. Choose grades: we suggest girls in 5-9 and boys in 8-9 grades. In addition, children in the 10-14 age group who are in ungraded rooms should be examined. The incidence of a curve is higher in boys than first realized. However, the significant curves that get into the treatment range — between 25 and 30 degrees — aren't very high. The ratio female/male of true idiopathic scoliosis is probably about five-to-one. For some unexplainable reason, many of the early curves detected in young boys either don't progress or disappear. For this reason, we are recommending screening boys in 8-9 grades only and girls in grades 5-9.

   (It is suggested for those initiating a program for the first time that one grade be chosen, perhaps sixth grade girls or eighth grade boys and girls. As involved personnel become more familiar with the screening technique and more proficient with the rescreening and referral process, the program can be expanded to gradually include all grades on a yearly basis.)

3. Training session for screeners: pamphlets, books, film, slides, and a handbook of procedure details. A physical therapist or orthopedist should help in the training.

4. Send letter to physicians in the area: general practitioners, pediatricians, orthopedist, family medicine, internists, osteopaths (Appendix A).

5. Acquaint pupils with information about the program and send letters home to parents (Appendix B).

6. Have screening devices made thru industrial arts or school shop classes.

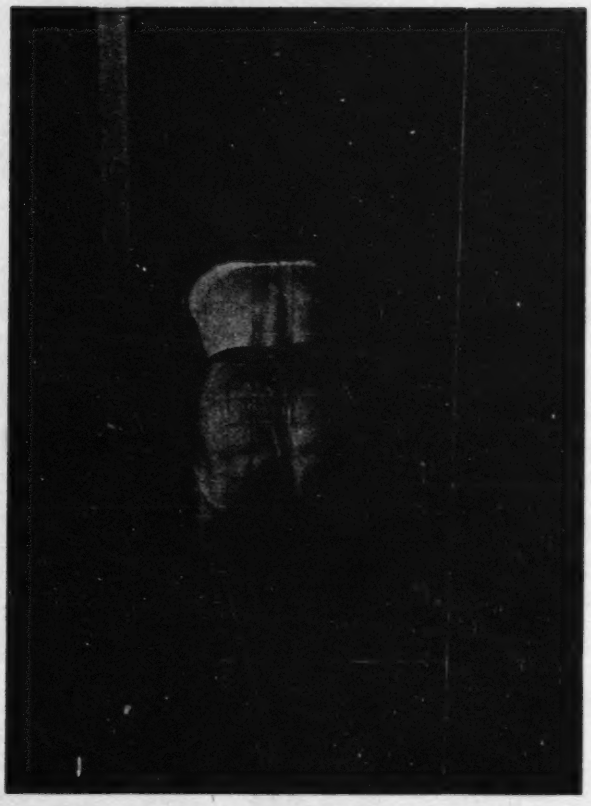
7. Have charts printed. Page 21 contains a sheet that may be reproduced.

8. Schedule place and time. Use of physical education class is convenient. Approximately 70-100 children per hour should be able to be screened.

9. Plan rescreening of all children who show suspicious curvature of the spine and/or rib hump. (Plan on about 10% of total group screened.) Screening and rescreening can be done at one time. For some, this procedure is most satisfactory.

10. Plan and execute referral.

11. Collect statistics and forward to the Bureau for Crippled Children: Number screened; grades; number of boys and girls rescreened; the number of boys and girls referred and outcome on each (see page 15).



This sixteen-year-old girl stands with a list to the left of almost 2 inches. Right shoulder and right hip appear higher. No rib hump noted in Adams position. X-ray shows a bend of the entire spine to the left. Measurement of the legs showed the right to be 0.5-centimeters longer than the left. Treatment consisted of a 1/4-inch lift in the left shoe.

SCREENING PROCEDURE

Since scoliosis and posture screening usually involve relatively large numbers of students, it is advisable to utilize at least two adults. One adult can devote complete attention to the screening process while the other attends to the organizational details. This also makes it possible for the screeners to occasionally alternate.

Optimum results are obtained when two teams of screeners (two people per team) are available. The actual screening can be accomplished most effectively by physical education instructors or volunteers. The rescreening should be done either by trained public health nurse, school nurse, physical therapist, or physician.

It may be helpful to have all the screeners observing when the first group of students is processed. They can compare findings and standardize the recording of their observation.

The following is a suggested procedure:

1. Screeners should be seated approximately 5-to-8 feet from the subject. This makes recording convenient and allows screeners to look at each subject from approximately the same angle.

2. Students are called in a predetermined order and asked to stand behind the posture grid with their feet approximately 6 inches apart on a tape marking the appropriate spot and facing to the examiner's left.

3. Students are urged to stand naturally, rather than at "attention" so that the test results will be valid.

4. The examiner then checks items A, B, and C on page 21 in order circling the grade of the student to the right of whichever picture most closely resembles his/her postural condition.

5. The student is then asked to remain on the tape mark but to face away from the examiner. It may be necessary to remind students to stand naturally.

6. The examiner now marks items D, E, and F on page 21 again circling the student's grade to the right of whichever picture most closely resembles his/her postural condition.

7. The student is then asked to bend forward, palms together, bending about half way down so hands fall at level of knees — item G is then circled on page 21.

8. The student then leaves the screening area and the next subject is called.

9. The examiner retains each student's screening form keeping those of each class together for use in the follow-up procedure.

RESCREENING AND FOLLOW-UP

If rescreening is not done immediately following the screening, it should follow within a short period of time. The screener sets aside any form with markings in the far right unshaded column on the chart on page 21 and those children are looked at again more closely and preferably without the grid. The Health Room or small private area is suitable for rescreening. It would be helpful at this point to secure the services of someone more highly trained in this area. Possibilities might include the county public health nurse, school nurse, physical therapist, or possibly a physician.

The most critical part of the entire screening program rests with the person doing the rescreening. It is at this point that the decision must be made to: (a) consider the subject a "variation of normal" and wait for another year before screening again, (b) follow-up by nurse with another critical look at the child in three to four months, or (c) refer to a physician.

In our pilot projects, we find that the tendency of the screeners is to be very critical and separate out 8% or 10% of the children for rescreening. This is probably desirable since it is unlikely that a child with scoliosis will be missed. However, it does place more strain on the rescreening procedure where the referral decision is to be made.

The photographs and descriptions in this handbook will be helpful in learning to select children for referral, but personal experience with the condition is even more valuable. As the screener gains more experience in seeing the children, the decision to refer or not to refer will become easier.

A few important points when rescreening:

1. Include a lateral view, view the child from the side in forward bending and make note of any roundback. If a postural roundback is present, the spine will round out to form a smooth arc. If a structural kyphosis (roundback) is present, the spine forms a sharp angle or hump at the apex of the kyphosis. This prominent hump is suggestive of a structural deformity, Scheuermann's Disease, and requires medical attention.

2. Don't be afraid to touch and handle the child. Sometimes this is the only effective way to make an accurate assessment. Also look from the front, this affords the best vantage point for viewing asymmetry. By feeling the back, you can sometimes detect a minor thoracic rib hump and a compensating lumbar "fullness" on the opposite side.

3. Leg length discrepancy is also quite common and can give the appearance of a rib hump. However, the apparent rib hump is usually one-sided, extending along one entire side. This is in contrast to the classic "S" curve which produces a rib hump on one side and a lumbar fullness on the contralateral side. Test leg length by locating anterior superior iliac spines. Place hands on crests and view from behind. The level of the crests can then be determined. Use a lift under the suspected shortened limb to visually determine leg length and level of pelvis. If the suspected difference is 1/2 inch or greater, the child should be referred to a medical doctor with your findings.

4. Carefully screen the boys! Weight lifters, athletes, paper boys, farm kids, etc. are very often asymmetrical. One side may be more muscular, more developed and this may mimic the true rib hump which is due to a rotation of the vertebrae and ribs.

Questionable cases: (Not enough suspicion to refer.) A student with a very suspicious appearance could be screened again in 4 to 6 months and referred to family physician if there is a change.

Twelve-year-ten-month-old girl with minimal findings. In the upright position the right shoulder is slightly lower than the left but the pelvis is level and arms hang equally. No rib hump is noted in the Adams position. X-ray shows minimal right thoracic curve. Disposition: reexamine in 6 months. This is an example of minimal findings which could be watched by the nurse.

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BUREAU FOR CRIPPLED CHILDREN INVOLVEMENT

The Bureau for Crippled Children (BCC) is interested in scoliosis and posture screening programs because of the insidious nature of these abnormalities and the benefits of early detection and treatment. We hope that all school systems would be able to adopt a screening program so that every preadolescent child in Wisconsin would be examined each year. The BCC is able to assist financially with an initial examination by the specialist when paying for this examination would be difficult for the family. We are also able to pay for treatment (Milwaukee Brace, casts, visits to an orthopedist, etc.) for families that fit into our financial criteria.

When there are many children that need to be seen by a physician, it is more economical to bring the doctor to the patients rather than have each patient individually seek medical care. The Bureau for Crippled Children may be able to assist in the organization of a scoliosis clinic and engage the services of an orthopedist who can see the children and make the diagnosis.

Regardless of the financial situation, our nurse and physical therapy specialists are available to assist nurses and families with the myriad of details concerning the care and treatment of this condition such as:

- Selecting a board certified orthopedist
- Location of clinics for treatment of scoliosis
- Handling emotional impact of wearing a Milwaukee Brace
- Exercises for children
- Location of physical therapy facilities

We would like to collect statistics on all the programs to help us better define the incidence of significant abnormalities in Wisconsin children and to suggest changes in the program. We would expect to combine the data from all the programs and publish these statewide statistics. Individual programs could then monitor their performance by comparing their own data with that of the entire state.

Figure 1.

Example of back screening from seated position. Examiner could be farther away and still have a good view of the back.

Using grid:

1. View subject from side.
2. View subject from back.
3. View subject in forward bending position.

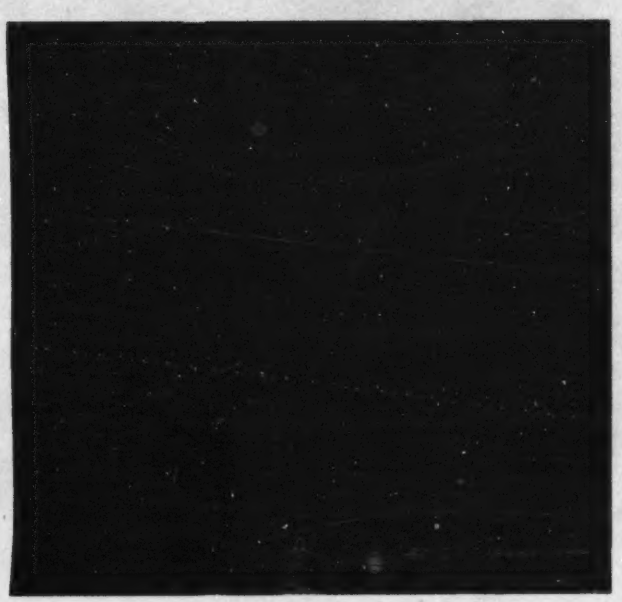


Figure 2.

Viewing of subject from side.

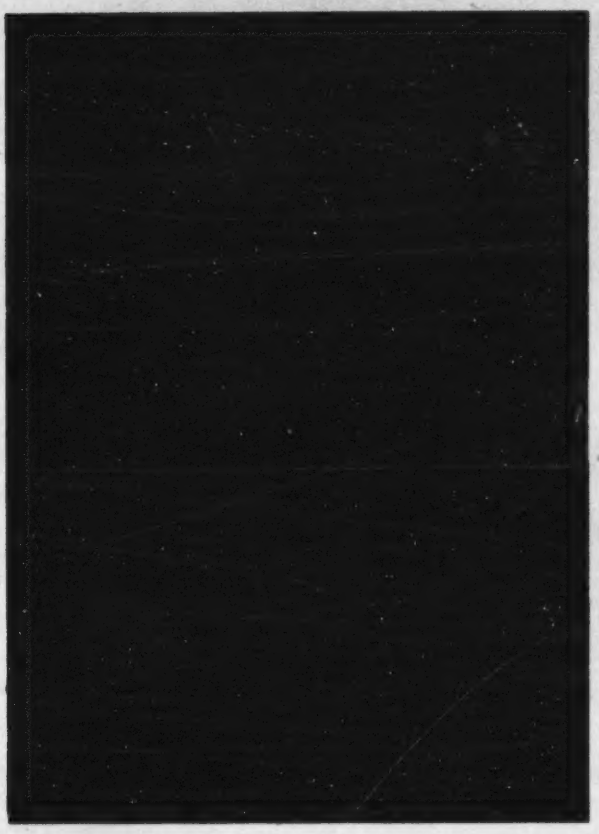


Figure 3.

Particularly when rescreening, it's helpful to view child from the front in the Adams position while not using the grid. This position affords the best opportunity to detect even the slightest rib hump or any other thoracic asymmetry.

Figure 4.

Don't neglect those with severe roundback which may be indicative of Scheuermann's Disease or structural kyphosis.

Figure 5.

View both from the side in standing position and forward bending. Again palms should be together and trunk flexion only 50% so hands come to level of knees. Note sharp angle formed in midthoracic region.

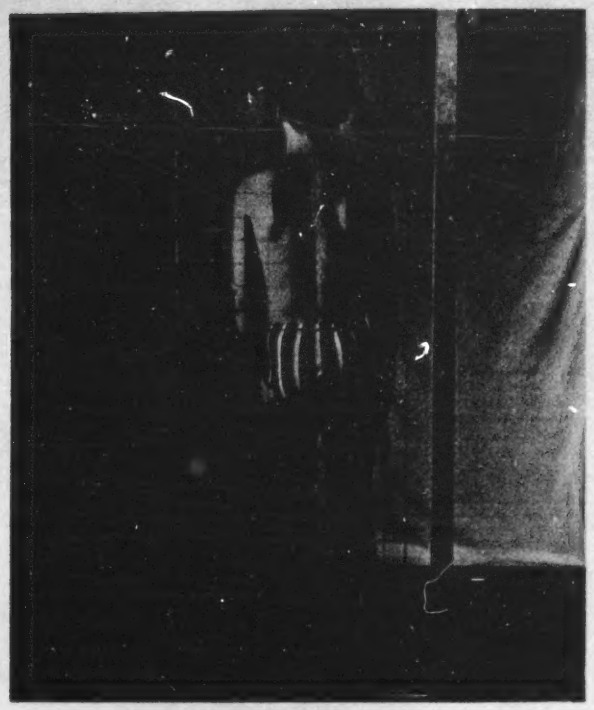


Figure 6.

White background with full lighting on subject.

Figure 7.

Side lighting to accentuate back contours.

Figure 8.

Simulation of scoliosis by standing on a book. Also note hanging position of arms, with left arm at a greater distance from the waist than the right arm. Note uneven knee creases and tendency for longer extremity to bend slightly.

Figure 9.

Simulation of scoliosis by standing on a book. Note asymmetry of back. The "apparent," not true, rib hump resulting from unequal legs extends along entire side of body, no compensating lumbar hump exists as with scoliosis.

Figure 10.
Boy with scoliosis in upright position. Curvature of back is not evident, but shoulders are uneven and the right arm hangs closer to the waist than the left arm.

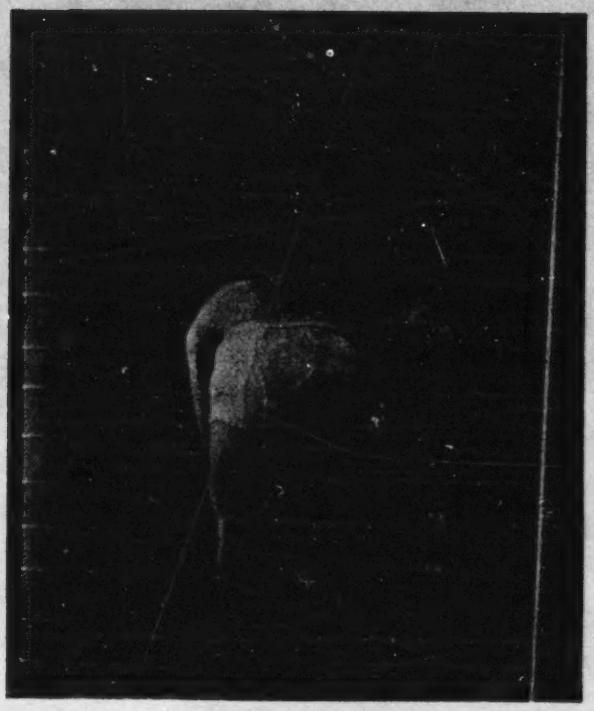


Figure 11.
Same subject in Adams position showing typical rib hump seen in scoliosis.

Figure 12.
Girl with scoliosis in upright position. Back curvature evident in side lighting. Shoulders uneven and left arm farther from waist than right arm.

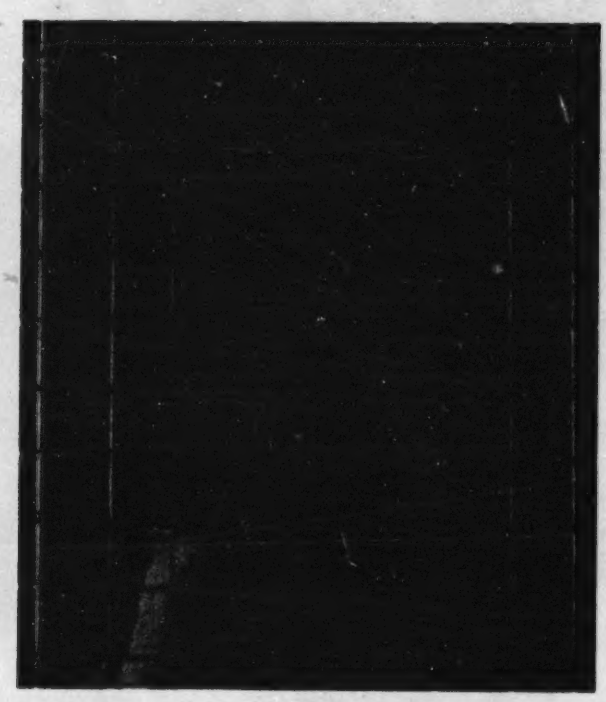


Figure 13.
Same subject in Adams position showing typical rib hump.

PI-2158

REPORT ON SCOLIOSIS AND POSTURE SCREENING PROGRAM

Date of Program: Month _____ Year _____ County _____

Name of School District: _____

Schools Screened (If not complete district):

Grades Screened: _____ Other Children Included in Screening: _____
(From where and how many children)

Total number screened: _____ Total number rescreened: _____

Total number failed rescreening: _____ Male _____ Female _____

A. Number to be followed by nurse: _____

B. Number referred to M.D.: _____

Disposition of M.D. Referrals:

A. Number referred to Family M.D.: _____

B. Number referred to Orthopedist: _____

C. Number referred to Field Clinic (Orthopedic or Scoliosis): _____

Screening Done By:

Physical Education Instructor
Nurse
Health Aid
Volunteer
Other

Rescreening Done By:

Nurse
Physical Therapist
M.D.
Volunteer
Other

For Scoliosis Clinic Only:

A. Number of Volunteers Utilized: _____

B. Total Number of Volunteer Hours: _____

Send to:

_____
Name and Title of Person Sending Report

Department of Public Instruction
Division for Handicapped Children
Bureau for Crippled Children
126 Langdon Street
Madison, WI 53702

APPENDIX A

SAMPLE LETTER TO AREA PHYSICIANS TO SOLICIT THEIR ASSISTANCE

Dear Dr. _____ :

The _____ school system is going to conduct a Scoliosis and Posture Screening Program for all children in grades 5 through 9 during the next few weeks.

Plans for this were developed by a committee of interested people with Dr. _____ representing the Medical Society. Details of the procedure can be obtained from him/her or from _____, the _____ nurse.

I am enclosing a copy of a statement by the Bureau for Crippled Children to explain the rationale for undertaking this project. We would ask your cooperation and assistance in helping the children discovered through this program.

Sincerely yours,

NURSE
OR
PRINCIPAL
OR
SCHOOL ADMINISTRATOR

APPENDIX B

LETTER TO PARENTS REGARDING SCREENING

Dear Parents:

In the next few weeks the schools of _____ are going to conduct a screening program to find children with scoliosis (curvature of the spine) or kyphosis (roundback) in the _____ grades.

In other states where this program has been conducted, four percent of the students have been found to have a spinal variation and two percent have required active treatment or ongoing observation. The purpose of the screening program is to recognize deformities in their earliest stages so that progression can be prevented.

The procedure for screening is a simple one in which the nurse looks at the child's bare back as he/she stands straight and as he/she bends forward. Any curvature or rib hump that is noticed may mean trouble and, therefore, should be seen by a doctor.

If your child has a suspicious condition, you will be notified and asked to take the child either to your family physician or an orthopedist for diagnosis.

Sincerely yours,

NURSE
OR
PRINCIPAL
OR
SCHOOL ADMINISTRATOR

APPENDIX C

SUGGESTED REFERRAL LETTER TO PARENTS OF CHILDREN WITH THE POSSIBILITY OF SCOLIOSIS

Dear Parents of _____ :

Your child's class has been given a simple physical screening to detect curvature of the spine. Although the results do not definitely mean there is a problem or that treatment is needed, we request that you have your family doctor examine your child for the possibility of scoliosis. Your family doctor may wish to refer you to an orthopedic specialist.

Only a small percentage of children need active treatment, but those who show any sign of spine curvature *must* see a doctor. Early detection and treatment could save your child from quite serious effects later in life.

Please ask the examining doctor to fill out this form when the exam is completed and then sign at the bottom and return this form to me.

Thank you for your cooperation. If there are any questions, please feel free to call me at _____ .

_____

School Nurse

PHYSICIAN'S FINDINGS
AND RECOMMENDATIONS

Child's Name _____

School _____ Date _____

Abnormal findings were noted on the above child in the school scoliosis screening program. Please review and, if indicated, obtain a single standing AP X-ray of the spine (a 14 x 17 inch film with the top of the film at the level of the shoulders and the tube centered on the center of the film; T-1 to S-1). The child must be standing with knees straight and not in a slouched posture. Thank you.

X-Ray Results _____

_____

_____ No significant findings at this time _____

_____ Need for further evaluation _____

_____ Reexamination or treatment recommended on (date) _____

Additional comments _____

Date of Exam _____ Signed _____ M.D. _____

Address _____

_____ Phone _____

Parent's Signature

APPENDIX D

SUGGESTED LETTER TO PARENTS OF CHILDREN WITH THE POSSIBILITY OF SCOLIOSIS (CLINIC ANNOUNCEMENT)

DATE

re: Child's Name
Birthdate
School
Grade

Dear Parents:

We have recently completed the scoliosis screening and we find that your child appears to have a condition with his/her back that warrants further medical examination.

The Division for Handicapped Children, within the Department of Public Instruction, is sponsoring a special diagnostic clinic jointly with the _____ public health department. Dr. _____ , an orthopedic specialist, will be the examining physician. The results of this examination will be sent to your family physician who can help you make plans for treatment.

The physician's examination will be of no cost to you. If an X-ray is indicated, your private insurance or medical assistance will be billed. If you have no insurance, the Division for Handicapped Children will assume the cost of the X-ray.

Please bring any insurance information with you to the clinic. If the insurance company requires an M.D.'s signature, please bring the necessary form with you. Boys may wear or bring gym shorts and girls a two-piece bathing suit or halter top and shorts which reveals the low back.

The appointment for your child is as follows: Place _____

Time _____

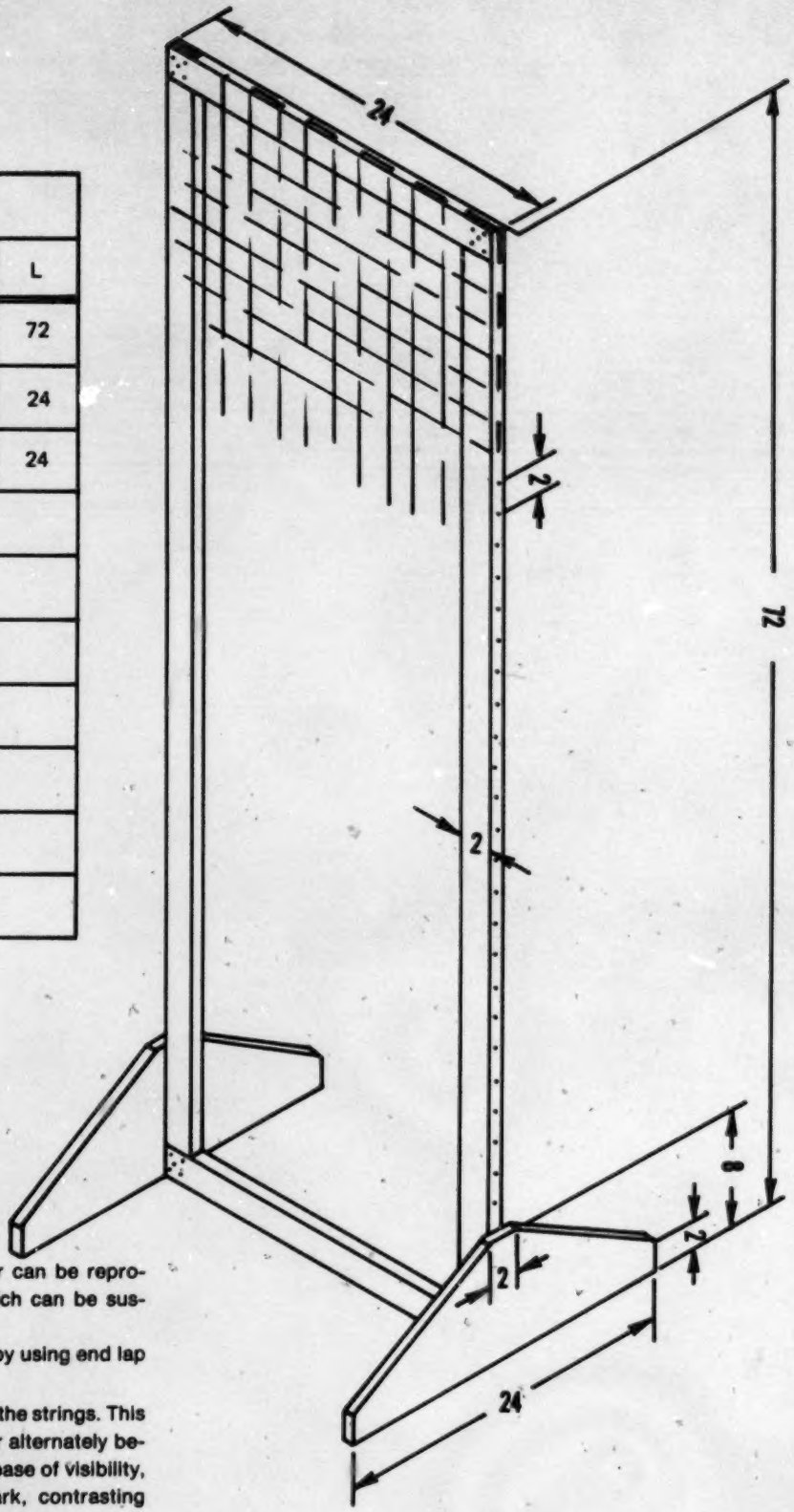
If you cannot bring your child to the clinic at this time, please notify me at _____ .

Sincerely yours,

School Nurse or Public Health Nurse

cc: School Health Record

MATERIALS				
NO.	NAME	T	W	L
2	SIDES	3/4	2	72
2	ENDS	3/4	2	24
2	FEET	3/4	8	24
6 FLT. HD. SCREWS: 1 1/2 X 8				
20 FLT. HD. SCREWS: 5/8 X 6				
100 WIRE NAILS: 1" X NO. 16				
125 FT. HEAVY WHITE CORD				
ALL WOOD: PINE				
SCALE: 3/32=1				
J. WOZNIAK				



Plastic grids are available commercially or can be reproduced on a heavy gauge clear plastic which can be suspended by wall or ceiling bracket.

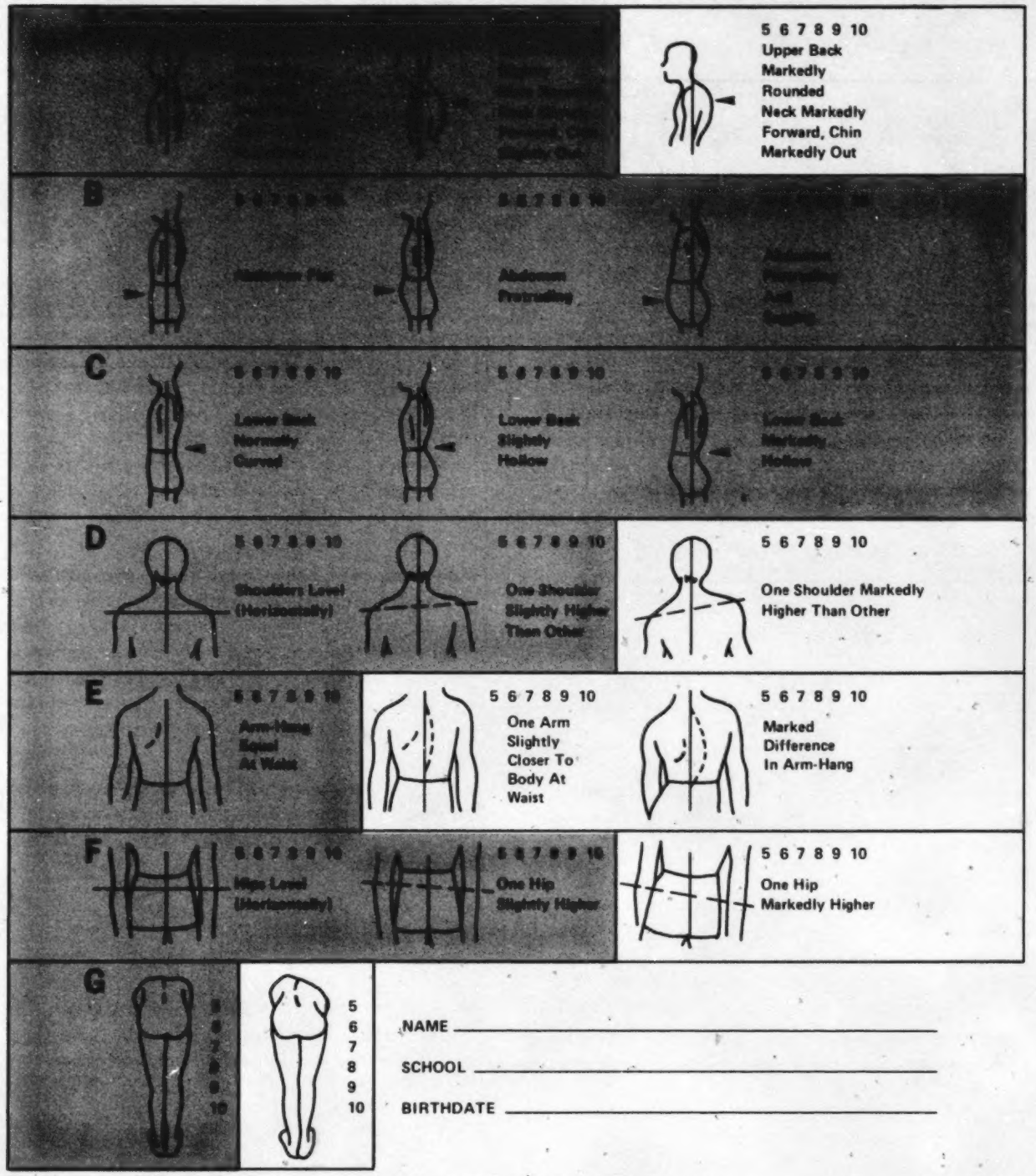
The assembly of this grid is accomplished by using end lap joints fastened with glue and screws.

When stringing the cord, do not interweave the strings. This enables you to insert a large sheet of paper alternately between the strings when painting them. For ease of visibility, alternate strings should be painted a dark, contrasting color. Spray painting seems to be most effective, however, brushing is possible.

A removable base or hinge in middle facilitates transporting.

GENERAL POSTURE AND SCOLIOSIS SCREENING

INSTRUCTIONS: Select the one figure in each series which most closely matches the condition of the student being screened, then circle the number representing the student's grade in school.


5 6 7 8 9 10
Upper Back Markedly Rounded Neck Markedly Forward, Chin Markedly Out
B
Abdomen Protruding
C
Lower Back Normally Curved
Lower Back Slightly Hollow
D
Shoulders Level (Horizontally)
One Shoulder Slightly Higher Than Other
5 6 7 8 9 10
One Shoulder Markedly Higher Than Other
E
Arm-Hang Equal At Waist
5 6 7 8 9 10
One Arm Slightly Closer To Body At Waist
5 6 7 8 9 10
Marked Difference In Arm-Hang
F
Hips Level (Horizontally)
One Hip Slightly Higher
5 6 7 8 9 10
One Hip Markedly Higher
G
5 6 7 8 9 10

NAME _____

SCHOOL _____

BIRTHDATE _____

INTERPRETATION OF FORM

Those children who fall in shaded areas indicate normal or a postural deviation, appropriate for adaptive physical education programs, not significant for medical referral. Those falling in the unshaded area of 'A,' indicating marked roundback or kyphosis, or in the unshaded area of 'G,' indicating evidence of rib hump, require medical referral. Unshaded areas of D, E, and F are significant for medical referral only when found to be in combination (i.e. high shoulder, unequal arm hang at waist, or hip obliquity). If hip obliquity or suspected leg length discrepancy is apparent, the examiner should try to determine degree, keeping in mind that slight obliquity is within normal limits, as is leg length discrepancy between 1/4 inch and 1/2 inch.

STATEMENT ON SCOLIOSIS AND
POSTURE SCREENING IN SCHOOLS
by
Department of Public Instruction
Division for Handicapped Children
Bureau for Crippled Children

Idiopathic scoliosis of adolescents is an insidious symptom-free condition affecting about four of 1,000 girls in the 9-15 year age bracket and about one-tenth of the number of boys. In the true cases, the tendency is for the curvature to become progressively worse until the bony growth is completed and all the epiphyses fused. This naturally leads, in the untreated cases, to respiratory embarrassment, shortness of stature, and visible deformity of the chest. These abnormalities can be eliminated or minimized by early treatment. Thus the interest in screening.

Since there are rarely any symptoms, detection is accomplished by observation and that age old cliche "a high index of suspicion." If all children in this age group were being seen by physicians, early detection could be accomplished. However, this does not occur.

We believe that there is great merit to school screening programs conducted by the nurses and/or physical education instructors.

The procedure is simple - observing the spine from the back for deviations and in a forward bending position (Adams position) for a rib hump. Those children who have been designated at the screening as having a possible abnormality are rescreened by a nurse or therapist for a second look. The children who, at this second screening, still seem to have an abnormality are referred to a physician.

Some general practitioners and pediatricians feel comfortable diagnosing the presence or absence of significant deviation of the spine, but the majority will refer the children to an orthopedist who has had more experience with the condition. This would certainly be true when it came to treatment, since the prescribing and fitting of a Milwaukee Brace which is often used in the treatment is a highly technical matter.

If the family needs help, the Bureau for Crippled Children can help pay for a specialty examination made by an orthopedist whose name is on our list of participating physicians. If you wish to refer a patient with a suspected abnormality, you might consider obtaining this financial advantage for your patient. Details of the referral process can be obtained through the nurse in charge of the screening program.

We urge you to support the Scoliosis and Posture Screening Program in your area and to assist in the prompt diagnosis and treatment of any child with correctable abnormalities found by this method.

Horace K. Tenney, III, M.D.
Director
Bureau for Crippled Children

SUGGESTED MEDIA RELEASE -
BEFORE BEGINNING ACTUAL SCHOOL SCREENING PROCESS PROGRAM

_____School District is having a scoliosis screening program. This is another screening program like the vision screening and the hearing screening programs.

Scoliosis is a curving of the spine to one side. The cause is unknown. It does not develop as a result of anything anyone *has* or *has not* done.

It usually becomes apparent during adolescence (10-18 years) when rapid growth occurs. Parents may notice that dresses or slacks do not hang evenly. One side may appear higher than the other. One hip and one shoulder may seem higher than the other. However, because the changes are often very subtle, the condition can easily go undetected. Thus the need for yearly school screening.

In the United States, nearly 10,000 youths are under treatment. The condition may be so mild it does not need treatment but during fast growing years, the youngster with a slight curve should be observed by the parents and physician for any signs of increase in curve.

The screening will be conducted by trained people. The reason for the screening is to find any curve early and to obtain the opinion of an orthopedist. Currently there is no known way to prevent scoliosis. Early detection is the only way to prevent it from becoming a severe problem.

If the curve increases, treatment can be started by the orthopedist who specializes in this kind of problem.

Treatment may consist of a brace and exercises taught by a physical therapist. Exercises alone *will not* correct a curve. Exercises help keep stomach and back muscles in excellent condition.

Occasionally surgery is necessary to straighten a large curve that cannot be corrected by bracing.

Left untreated, a severe curve will cause pain in later life, possible damage to heart and lung, and cosmetic deformity.

As always, early detection is better than late correction.

DESCRIPTION OF SCOLIOSIS

Scoliosis is a curvature of the spine. Instead of being straight, the spine curves to one side or the other. In most cases the cause is unknown. It usually becomes apparent during adolescence (10-18 years) when rapid growth occurs.

The changes which occur are often very subtle, one hip and one shoulder may seem higher than the other, one shoulder blade may appear more prominent, slacks or a dress may not hang evenly. Therefore, the condition can easily go undetected thus necessitating the need for yearly school screening.

In the United States, nearly 10,000 youths are under treatment. The condition may be so mild it does not need treatment, but during fast growing years it is most important for the child with a slight curve to be closely followed by a physician and observed for any signs of increase in the curve. Currently there is no known way to prevent scoliosis.

Treatment may consist of a brace and exercises taught by a physical therapist. Exercises alone *will not* correct a curve. Exercises help maintain tone and strength in the trunk muscles and encourage good posture. Poor posture does not cause nor affect scoliosis.

Occasionally, surgery is necessary to straighten a large curve that cannot be corrected by bracing.

Left untreated a severe curve will cause pain in later life, possible damage to heart and lungs, and a marked cosmetic deformity.

Early detection is the only way to prevent it from becoming a severe problem.

POINTS TO REMEMBER

I. Poor posture does not cause scoliosis or affect the progress of the curve.

II. Exercise alone does not prevent *mild* scoliosis from getting worse. By mild, a child not yet in a brace.

III. The most accurate way of telling whether a curve is progressing is serial X-ray evaluation with the X-rays being taken 3 to 6 months apart.

IV. The most common scoliosis classification, the idiopathic group, has a strong heredity factor. So it is vital that all brothers and sisters of a diagnosed scoliosis case be screened regardless of age.

V. Look for relative shape posteriorly of the thorax and lumbar area, *not* the alignment of the spine. If you wait until you can see an obvious lateral curvature when you look down the spinous processes, you have a curve which, in many cases, is 35 or 40 degrees.

ADDITIONAL RESOURCES

ARTICLES

1. Blount, Walter P., "Early Recognition and Prompt Evaluation of Spinal Deformity", *The Wisconsin Medical Journal,* August, 1968, pp. 245-249.

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3. Bradford, D.S., Moe, John H., and Winter, Robert B., "Scheuermann's Disease Kyphosis and Roundback Deformity", *The Journal of Bone and Joint Surgery,* Vol. 56-A, 1974, p. 444. (Proceedings of Scoliosis Research Society)

4. Drummond, Denis S., M.D., F.R.C.S. (C); Gurr, Jean, R.N.; and Rogala, Eugene J., M.D., F.R.C.S. (C), "Scoliosis: Incidence and Natural History", *The Journal of Bone and Joint Surgery, Incorporated,* Vol. 60-A, No. 2, March, 1978, pp. 173-176.

5. Hensinger, Robert, M.D., et al., "Orthopedic Screening of School Age Children: Review of a 10-Year Experience", *Orthopedic Review,* Vol. IV, No. 1, January, 1975, pp. 23-27.

6. Hill, Patty Maynard, R.N., M.Ed., and Romm, Linda Sotebeer, R.N., M.S.N., *Screening for Scoliosis in Adolescents.*

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8. Winter, Robert B., M.D., and Moe, John H., M.D., "A Plea for the Routine School Examination of Children for Spinal Deformity", *Minnesota Medicine,* Vol. 57, May, 1974, pp. 419-423.

9. Winter, Robert B., M.D., "How to Find a Special Deformity - - - Look for It", *Modern Medicine,* May 1, 1975, pp. 38-43.

FILMS

1. *Scoliosis Screening for Early Detection*
   (Available Upon Request From: Bureau for Crippled Children, 126 Langdon Street, Madison, WI 53702.)

2. Slide Presentation *(Enlargement of Handbook - Slow Dangerous Curve)*
   (Available Upon Request From: Bureau for Crippled Children, 126 Langdon Street, Madison, WI 53702.)

BOOKS - PAMPHLETS

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2. Campbell, Eleanor, R.N., and Hinckey, Nancy, B.A., *"Brace Yourself... Scoliosis and The Milwaukee Brace",* The Rainbow Hospital Youth Spine Center, 2065 Adelbert Road, Cleveland, OH 44106, 1974.

3. *"Chiropractors: Healers or Quacks?",* The Eighty-Year War With Science, Consumers Union, Orangeburg, NY 10962, 1977.

4. Heckman, Lynn A., M.A., *What If You Need An Operation For Scoliosis?,* The Rainbow Hospital Youth Spine Center, 2065 Adelbert Road, Cleveland, OH 44106, 1974.

5. *"Scoliosis",* CIBA Clinical Symposia, CIBA Pharmaceutical Company, Medical Education Division, Summit, NJ 07901, 1978.

6. *"Scoliosis...What's That?",* Scoliosis Research Society, 444 North Michigan Avenue, Chicago, IL 60611.

ACKNOWLEDGEMENTS

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2. Scoliosis Screening for Early Detection. 1976. Multi Video International, Inc., 7300 Frances Avenue South, Minneapolis, Minnesota.